

Application Serial No. 10/544,214
Reply to Office Action of July 15, 2008

PATENT
Docket: CU-4366

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Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently amended) A method for increasing the chrome to iron ratio of a chromite product selected from the group consisting of ore and ore concentrate comprising the steps of
 - a. mixing the chromite product with at least one salt so as to produce a mixture, whereby the concentration of salt in the mixture is selected to induce the selective chlorination of iron; and
 - b. chlorinating the mixture in the presence of CO at a temperature sufficient to induce the formation of a thin film of a melt around the chromite product and at a temperature able to promote the selective chlorination of iron, and forming gaseous FeCl₃,whereby an iron impoverished chromite product is yielded having an increased chromite to iron ratio as compared to that of the chromite product.
2. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein said temperature is between about 157° and about 750°C.
3. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the at least one salt is selected from the group consisting of NaCl, KCl and MgCl₂ and a combination thereof.
4. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the salt is NaCl and forms about 5% to about 10% w/w of the mixture.
5. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the salt is NaCl and forms about 5% w/w of the mixture.
6. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the

Application Serial No. 10/544,214
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PATENT
Docket: CU-4366

temperature is between about 250° and about 720°C.

7. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the temperature is between about 670° and about 720°C.

8. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein ~~[[the]]~~ a ratio of Cl₂/CO ratio is between about 0.5 and about 1.5.

9. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the mixture is dried before chlorination.

10. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein N₂ is used as a carrier gas during chlorination.

11. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the duration of the chlorination is about 30 minutes to about 2 hours.

12. (Currently amended) ~~[[A]] The method as recited in~~ of claim 1, wherein the duration of the chlorination is about 2 hours.

13. (Currently amended) A method for increasing the chrome to iron ratio of a chromite product selected from the group consisting of ore and ore concentrate comprising the steps of

a. mixing the chromite product with NaCl so that a mixture is produced having about 5% to about 10% NaCl w/w; and

b. chlorinating the mixture in the presence of CO at a temperature sufficient to induce the formation of a thin film of a melt around the chromite product and at a temperature able to promote the selective chlorination of iron, and forming gaseous FeCl₃,

whereby an iron impoverished chromite product is yielded having an increased chromite to iron ratio as compared to that of the chromite product.

14. (Currently amended) ~~[[A]] The method as recited in~~ of claim 13, wherein

Application Serial No. 10/544,214
Reply to Office Action of July 15, 2008

PATENT
Docket: CU-4366

said temperature is between about 157° and about 750°C.

15. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein the salt is NaCl and forms about 5% w/w of the mixture.

16. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein the temperature is between about 670° and about 720°C.

17. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein [[the]] a ratio of Cl₂/CO ratio is about 0.5 and about 1.5.

18. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein the mixture is dried before chlorination.

19. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein N₂ is used as a carrier gaz during chlorination.

20. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein the duration of the chlorination is about 30 minutes to about 2 hours.

21. (Currently amended) [[A]] ~~The method as recited in~~ of claim 13, wherein the duration of the chlorination is about 2 hours.

22. (Currently amended) A method for extracting iron from a chromite product selected from the group consisting of ore and ore concentrate comprising the steps of

- a. mixing the chromite product with at least one salt; and
- b. chlorinating the mixture in the presence of CO at a temperature sufficient to induce the formation of a thin film of a melt around the chromite product so as to promote the chlorination of iron, and forming gaseous FeCl₃,
whereby an iron impoverished chromite product is yielded.